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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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Raoul Florent

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PHILIPS INTELLECTUAL PROPERTY & STANDARDS

P.O. BOX 3001

BRIARCLIFF MANOR, NY 10510

EXAMINER

PATEL, SHEFALI D

ART UNIT

PAPER NUMBER

2621

DATE MAILED: 08/09/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/587,394	Applicant(s) FLORENT, RAOUL	
	Examiner Shefali D. Patel	Art Unit 2621	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 April 2005.
- 2a) ☒ This action is FINAL. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 16-28 is/are pending in the application.
 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 29 is/are allowed.
- 6) ☒ Claim(s) 16-18, 20 and 28 is/are rejected.
- 7) ☐ Claim(s) 19 and 21-27 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment

1. The amendment was received on April 26, 2005.
2. Claims 1-15 are cancelled.
3. Claims 19 and 21-27 are objected.
4. Claim 29 is allowed.
5. Claim 16-28 are pending in this application.

Response to Arguments

6. Applicant's arguments filed on April 26, 2005 (pages 9-11) have been fully considered but they are not persuasive.

Applicant argue on page 9 stating that Sethian and Cohen in combination teaches away from “back propagating the front...path following the threadlike structure in the image are extracted” as recited in claim 16. Applicant further argues on page 9 stating that Sethian and Cohen in combination teaches away from “means for marching a front from the start point...until the start point is reached” as recited in claim 28.

The examiner disagrees.

Please note that Sethian discloses the threadlike structure as seen in Fig. 4 on page 1593, see, page 1593 column 1 last paragraph to column 2 where the predetermined start point is “smaller values” and the predetermined end point is “larger values” of a grid.

Further, Cohen discloses back propagating the front along a first track starting at the end point through the children and the fathers of the first track until the start point is reached whereby the points of the path following the threadlike structure in the image are extracted (page 16 section 3.5.2).

Note that Cohen incorporates Sethian's method of ‘marching a front of points forward...’ in section 3.4.4 on pages 14-15.

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Applicant further argues on page 10 with regards to Cohen teaching away from the limitations recited in claims 16 and 28 stating the background of the applicant's invention on page 2 lines 16-25.

The examiner disagrees.

Applicant is reminded that the features listed in the background of the applicant's invention are not recited in the independent claims 16 and 28. Claims are given their broadest reasonable interpretation possible (See, *In re Morris*, 127 F.3d 1048, 1054-55 (Fed. Cir. 1997)). Cohen meets the back propagating step, where, Sethian discloses marching front of points. In combination, the limitations recited in claims 16 and 28 are met. It is obvious to combine these two references because one of ordinary skill in the art would have been motivated to have the processing step of Cohen for back propagating to select the best path so that the access path with the minimum distance can be detected relatively fast by determining best and minimal path as suggested by Cohen (sections 3.2, 3.3. and 3.5 and also first full paragraph on top of page 17).

Applicant mentions Cohen having constructs the convex surface of the cost map and Cohen obtaining the minimal path by the steepest gradient descent in the convex surface on page 10 of the Remarks. The examiner would like to point out that the independent claim 16 and 28 does not mention not having these features. Nowhere in these claims there is any distinction between the background mention on page 10 of the remarks and the limitations recited in these claims.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 16-18, 20 and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sethian ("A fast marching level set method for monotonically advancing fronts, " *Applied Mathematics*, 1996) in

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combination with Cohen et al. (hereinafter, "Cohen") ("Global Minimum for Active Contour Models: A minimal Path Approach," IEEE, 1997).

With regard to **claim 16** Sethian discloses an image processing method of extracting points of a path following a threadlike structure in an image formed by a grid of potential points (page 1592, column 2 lines 10-16), comprising: Marching a front of points forward starting at a predetermined start point (i.e., smaller values) until a predetermined end point (i.e., larger values) of a grid is reached to thereby identify at least one track formed by succeeding points denoted fathers and corresponding children of the threadlike structure (the threadlike structure is seen in Fig. 4 on page 1593, see, page 1593 column 1 last paragraph to column 2).

However, Sethian does not expressly disclose back propagating the front along a first track starting at the end point through the children and the fathers of the first track until the start point is reached whereby the points of the path following the threadlike structure in the image are extracted.

Cohen discloses back propagating the front along a first track starting at the end point through the children and the fathers of the first track until the start point is reached whereby the points of the path following the threadlike structure in the image are extracted (page 16 section 3.5.2).

Please note that Cohen incorporates Sethian's method of 'marching a front of points forward...' in section 3.4.4 on pages 14-15.

Sethian and Cohen are combinable because they are from the same field of endeavor, i.e., image processing for threadlike structure. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to combine the teaching of Cohen with Sethian. One of ordinary skill in the art would have been motivated to have the processing step of Cohen for back propagating to select the best path so that the access path with the minimum distance can be detected relatively fast by determining best and minimal path as suggested by Cohen (sections 3.2, 3.3. and 3.5 and also first full paragraph on top of

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page 17). Therefore, it would have been obvious to combine Cohen with Sethian to obtain the invention as specified in claim 16.

With regard to **claim 17** Sethian discloses the marching the front of points forward starting at the predetermined start point until the predetermined end point of the grid is reached includes: conditionally selecting a first child of the grid to succeed a first father of the grid (see section 2 titled "Marching Forward" on page 1593 column 2).

With regard to **claim 18** Sethian discloses the first child conditionally selected in accordance with a location for the first father that pertains to the front (see section 2 titled "Marching Forward" on page 1593 column 2), and Cohen discloses a first cumulated cost for the first that is minimal compared to other points of the front (page 10 section 3.4.1 second paragraph).

With regard to **claim 20** Cohen by way of referencing Sethian discloses the first child conditionally selected in accordance with a filiation that determines the first child becomes a possible second father of the front for further forwarding the front (see Figure 1 of Cohen and also section 3.4.4 on pages 14-15).

Claim 28 recites identical features as claim 16 except claim 28 is a system claim. Thus, arguments similar to that presented above for claim 16 is equally applicable to claim 28. Please note that Cohen discloses an algorithm to execute the method disclosed in section 6 on page 24.

Allowable Subject Matter

9. Claim 29 is allowed for the same reasons stated in the previous office action mailed on January 26, 2005.

10. Claims 19 and 21-27 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

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11. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Shefali D. Patel whose telephone number is 571-272-7396. The examiner can normally be reached on M-F 8:00am - 5:00pm (First Friday Off).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Joseph Mancuso can be reached on (571) 272-7695. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Shefali D Patel
Examiner
Art Unit 2621


JOSEPH MANCUSO
PRIMARY EXAMINER

July 28, 2005